APPROVAL FORM

Pike Lake Provincial Park

This Park Management Strategy is hereby approved for Departmental use in the management and development of the park.

RECOMMENDED:

APPROVED:

Director Parks & Lands	Executive Director Operations	Deputy Minister
July 11, 1984	July 11, 1984	July 11/84
Date	Date	Date

ACKNOWLEDGEMENT

I would like to extend my appreciation to the following individuals for the time and effort they expended in developing this Park Management Strategy.

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FOREWORD

The following Park Management Strategy provides a comprehensive information base and an integrated planning strategy that will assist in the management and development of the Park over the course of the next three to five years. The key components of the report include proposed programs and facilities for the park along with individual program guidelines for the ongoing management of specific programs and land uses.

The report, unlike a more detailed Master Plan, is based on existing information and knowledge and has been prepared in a relatively short time frame. Due to these limitations it is intended that the strategy will be updated to incorporate new information and respond to any major changes in conditions. The updates will be scheduled for fall immediately following a summer season and in advance of the next budget cycle.

SUMMARY

Pike Lake Provincial Park is the second smallest Provincial Recreation Park in the province. As a result, management strategies for the area focus on the upgrading and development of recreational facilities. Resource management, although important to perpetuate the resource base of the park, is not of major concern except for the water supply and water quality of the lake.

Major development proposals identified in this report include the construction of a swimming pool, a parking lot at the recreation hall, a sports field and two creative playgrounds. Other development involves the upgrading or expansion of existing facilities.

Expansion of the present water pumping station is of major importance and is the basis for several major issues dealing with the park. To legally licence the pumping operation, a small portion of several properties along the lake must be purchased or an easement obtained. The Department of Agriculture has an expressed interest in the pumping station project, and are proposing some agricultural irrigation from the lake. Ducks Unlimited are proposing to dyke off the adjacent marshland which in turn will affect the amount of water needed to sustain the lake levels of Pike Lake. The stabilization of lake levels and increased flow through the lake as a result of irrigation may also have a beneficial effect to the water quality of the lake.

The existing golf course provides an excellent opportunity for private sector investment. Although presently in a deteriorated condition, improvements and expansion of the facility could result in a profitable investment as well as enhance the park as a recreational area. The park store/ concession also requires some improvement which may best be provided if the facility is owned and operated by a private entrepreneur.

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APPENDIX

Appendix I: Population Base within 50 km of Pike Lake Provincial Park

Appendix II: Recreational Opportunities within a 50 km Radius of Pike Lake Provincial Park

Appendix III: Land Use of Pike Lake Provincial Park

Appendix IV: Field Inventory of Pike Lake Provincial Park

Appendix V: Park Use Statistics

Appendix VI: Camping Statistics

Appendix VII: Regional Colour Themes

Appendix VIII: Pike Lake Fisheries Resource

1.1 Park History

Pike Lake Provincial Park was formally established in 1960, but has served the local area as a recreation area since the early 1900's. The years 1915 to 1930 saw the first real development with some 30 cottages being built on the lake. The area occupied and developed was from the present north gate to approximately the golf course on the south. Eventually some property south of the cottage development was purchased giving the holding a quarter section with a mile of lake front and a golf course extending west to Highway 60. This property was then incorporated as the Lakeside Country Club Ltd., with some 30 shareholders.

The development during this early period was extensive and included a nine-hole course with a spacious clubhouse, three court tennis facility, ball diamond, beach and swimming area and various picnic and playground facilities. The area received heavy use with many ball tournaments and sports days organized for members.

Pike Lake during the 30's deteriorated probably due to poorer economic conditions as a result of drought on the Prairies along with the fact that people were becoming more mobile as better roads and cars were developed. It was during this time that the Saskatoon Motor Club took over, in an attempt to keep the lake facilities viable.

During the 40's, 50's and 60's, Pike Lake received a new revival after the declining period of use during the 30's, and an additional 28 blocks of shares were purchased. The golf course was improved, a new surface was put on the tennis courts, a mechanical weed cutter was introduced, the 'swimmer's itch' problem was treated and water pumping from the river was introduced. Grants from the P.F.R.A. saw improvements to the beach and swimming area. Pike Lake again became so popular with the public that the Club could not cope with the crowds, so all shares were sold to the Government and the Pike Lake Provincial Park was formed.

1.2 Park Classification

Pike Lake Provincial Park is classified as a recreation park. The purpose of recreation parks is to provide high quality recreational opportunities within close proximity of major population concentrations. Pike Lake is one of ten provincial parks set aside for this purpose in the province.

1.3 Park Theme

Pike Lake is intended to serve the surrounding communities primarily as a day-use recreation area. As such, the park theme is family recreation in a natural setting and does not reflect any outstanding feature of the area. Pike Lake, being an oxbow lake, does however provide interesting interpretive possibilities since it is part of the South Saskatchewan River Basin and illustrates the result of stream meanderings typical to a prairie stream drainage pattern.

1.4 Regional Tourism and Recreation Role

Pike Lake Provincial Park has traditionally served the Saskatoon region as a major recreational focal point. As one of the ten provincial recreation parks, it is centrally located in the Province and draws a large day-use crowd as well as short duration overnight visitors.

The largest urban centre within 50 km of Pike Lake is Saskatoon, which naturally generates most of the park use (see Figure 1). Other smaller centres and rural communities contribute to form a population base of approximately 184,000 within a 50 km radius of the park. (See Appendix I).

Other areas which provide recreational opportunities within a 50 km radius of Pike Lake include 1 regional park, 2 provincial recreation sites and the Meewasin Valley Authority in Saskatoon. Within a 100 km radius, an additional 7 regional parks and 8 provincial recreation sites/picnic grounds are available. The facilities provided at each of these sites are listed in Appendix II. Pike Lake Provincial Park, however, remains an important recreational area in close proximity to Saskatoon.

1.5 Park Goal

The goal of Pike Lake Provincial Park, as a recreation park, is to provide readily accessible, high quality recreational and interpretive opportunities for residents and tourists in the province. As part of the Provincial Parks System, future management strategies will focus on the upgrading and maintenance of existing facilities and new facilities will be designed to enhance the area as a day-use recreational park.

1.6 Park Objectives

- to increase the variety of year-round recreational opportunities through the development and maintenance of park facilities such as campgrounds, picnic areas, playgrounds and other recreation facilities;

- to broaden visitor participation in park recreational activities through various park events, and recreational programs;

- to provide nature study facilities and outdoor interpretation programs to encourage environmental awareness and appreciation;

- to perpetuate the existing natural resource base of the park through proper management techniques and park zoning guidelines;

- to further development of park facilities by encouraging private sector investment within the park, along with select complementary public sector developments.

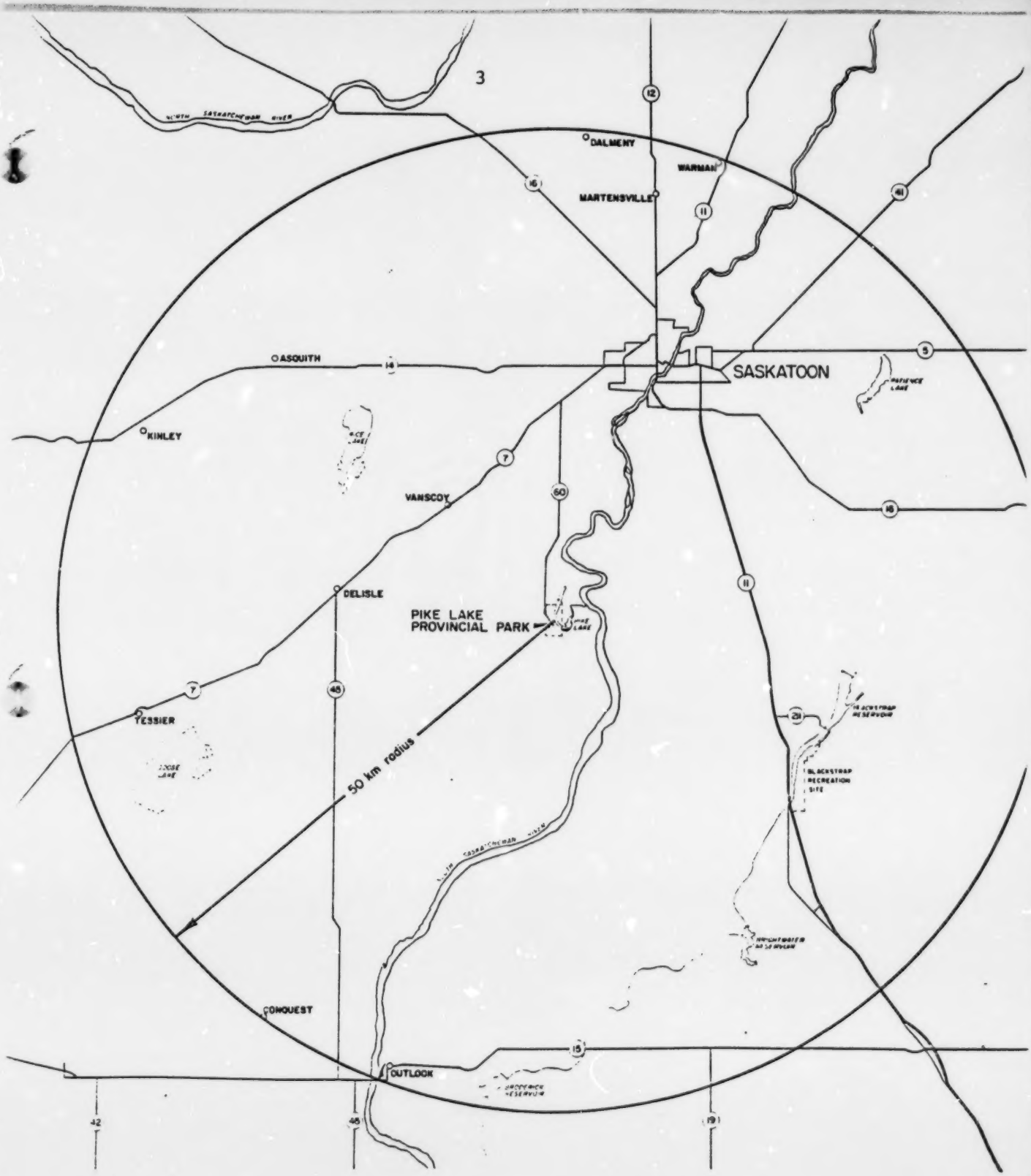


Figure 1: 50 km Zone of Population Influence for Pike Lake Provincial Park

1.7 Previous Plans

No master plan has ever been completed for Pike Lake Provincial Park. However, various Department programs have been compiled identifying numerous proposed developments for the park. In 1982, the Pike Lake Association conducted a user survey to determine the priority needs of the people associated with their group. Likewise, in 1982, Program Planning Branch of the Department of Tourism and Renewable Resources undertook a Park User Survey of Pike Lake Provincial Park. Results of these two surveys are listed in Table I.

Table 1: User Priority List for Improved Facilities

Pike Lake Association	1982 Park User Survey
Water Level	Water Quality
Weed Control	Beach Area
Itch Control	Golf Course
Highway Access Improvements	Fishing
Shoreline - Beach Improvements	Recreation Facilities
Water Service - Eastbank Subdivision	Cleanliness
Golf Course Improvements	Service (Store/Cafe)
Beaver Control	

A five year development plan compiled for the Regional Scan of Tourism and Recreation Development Opportunities in 1980, identified the need for various park improvements and additional facilities. This development included improvements to the golf course, swimming area, playgrounds and picnic areas. Further campground electrification was proposed along with an expanded program for nature interpretation, increased winter recreation facilities and the development of a park store and recreation hall.

These management strategies attempt to examine earlier development proposals and the development needs expressed in the two user surveys in combination with present development needs to form a future management strategy for Pike Lake Provincial Park.

1.8 Existing Land Use

Pike Lake Provincial Park covers an area of approximately 500 hectares (1,235 acres) and lies within the river valley of the South Saskatchewan River. Situated on either side of Pike Lake, the area provides a variety of recreational opportunities (see Figure 2).

Pike Lake itself is a significant feature of the park, being an oxbow lake created by the meandering of the South Saskatchewan River. Because of the nature of its formation, a major problem of the lake is its fluctuating water levels. Because it is an oxbow lake, the water available to replenish the lake's supply is minimal. In the past, periodic flooding of the South Saskatchewan has helped to replenish the lake; however, since the completion of the Gardiner Dam in 1967, water levels have been maintained by artificial means. Water is pumped from the Saskatchewan River to help perpetuate the lake as a natural and recreational feature in the park.

PIKE LAKE PROVINCIAL PARK

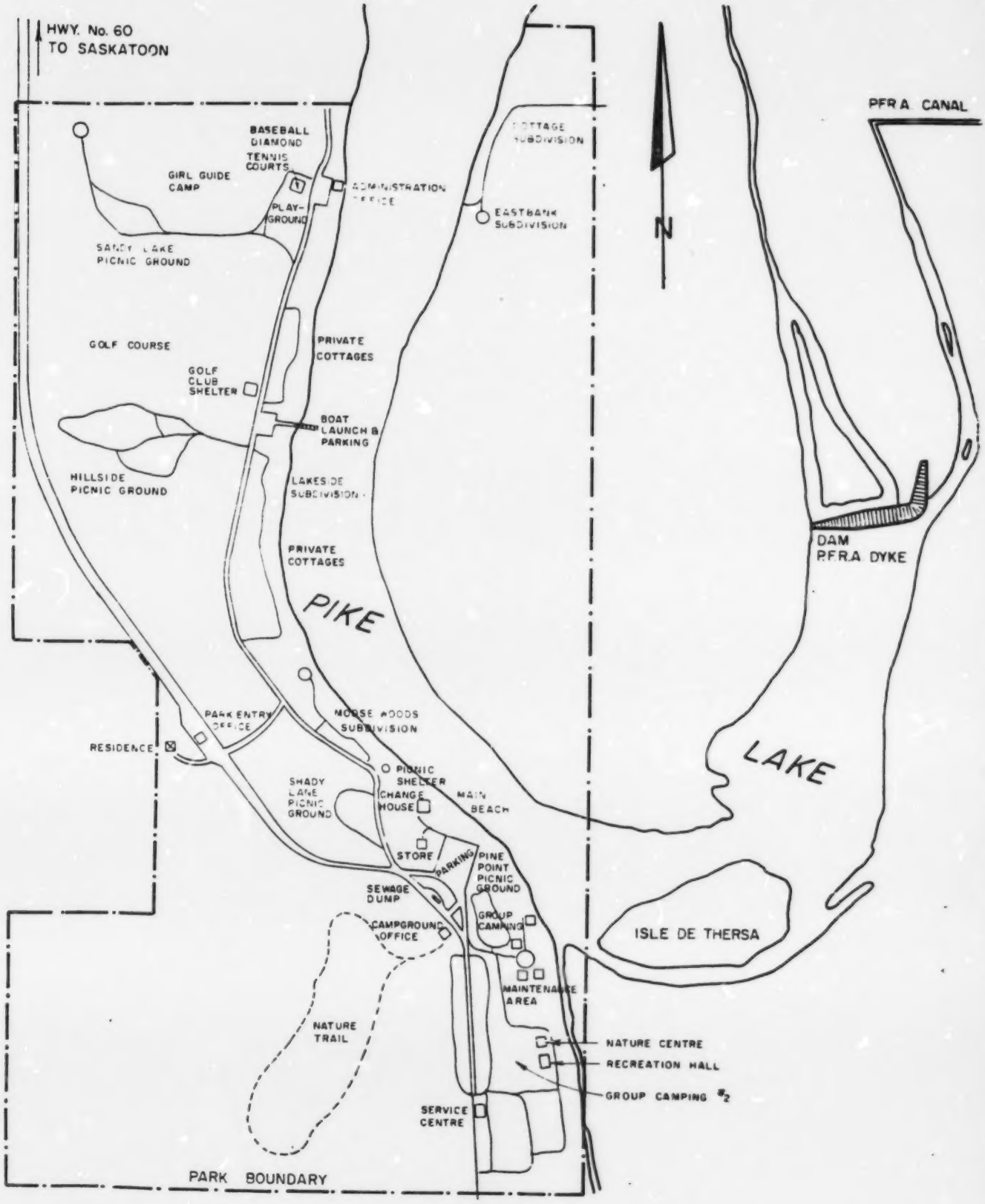


Figure 2: Existing Recreation Land Use

Because the park is located within the South Saskatchewan River Valley, the soils are mostly pure dune sand with some sandy or sandy clay loam. Forested areas occur along the west side of the lake and on the flat land south of the lake. Parts of the woodland have been cleared and the land cultivated or developed for recreational purposes. The remainder of the west portion of the park is covered mostly with scrub and dune grasses and occasional clumps of poplar. The east portion of the park is forested with willow shrub species and extensive plantation areas.

The lake is approximately 4.8 km (3 miles) in length and varies in width from 182 m (200 yards) to 457 m (500 yards). There are 138 private cottage holdings located on the lake within three subdivision areas. Practically all of the development in the park occurs on the west side of the lake with only 23 cottages located on the eastern shoreline. Land use for the rest of the park is specifically identified in Appendix III.

1.9 Recreation Capability

According to the Canada Land Inventory Classification for Recreation Capability, Pike Lake Provincial Park has a moderately high to high capability for land based recreation. Popular activities at present include picnicking, camping, biking, hiking and outdoor sports such as baseball, tennis and golfing. Winter recreation has been limited in the past; however plans are underway to establish cross-country skiing facilities.

Expansion of recreational facilities is somewhat restricted on the west side of the lake due to the limited land base. The east portion of the park could be utilized for future expansion; however it tends to be isolated from the existing core area.

At present, Pike Lake has only a moderate capability for water-related activities. Environmental problems with water level fluctuations, weed infestation and deteriorating water quality demand attention before the lake can realize a higher water based recreation potential. Water-based recreation activities in the park include boating (motors not exceeding 10 HP), sailing, swimming and beach activities. These activities, however, are presently limited due to environmental problems as outlined.

The park has a high capability for outdoor education and interpretation. The nature of the lake's formation, the sand dunes and the general characteristic of the river valley environment provide an interesting basis for numerous interpretive possibilities. The adjoining wetlands and marsh along the southern section of the lake may also provide an additional area for interpretation if the area comes under the management of Ducks Unlimited as is presently being proposed.

Appendix IV provides a complete field inventory of all recreation facilities at Pike Lake.

1.10 Recreation Use and Trends

Since the time the park was incorporated into the Provincial Park System in 1960, the total visitations annually have grown from 80,000 to a peak of 272,000 visits. In recent years, however, visitation has stabilized in the area of 180,000 to 190,000 visits annually (see Table 2).

Table 2: Total Annual Visitations to Pike Lake Provincial Park

	No. of Visitors		No. of Visitors
1982	188,504	1977	184,352
1981	188,420	1976	236,592
1980	178,052	1975	227,224
1979	164,628	1974	187,372
1978	226,024	1973	270,132

Of the total number of people visiting Pike Lake, statistics on camper use confirm that Saskatoon generates a large portion of park users (see Table 3).

Table 3: Origin of Campers

Origin	Percent of Total Campers				
	1982	1981	1980	1979	1978
Saskatoon	66.3	60.9	69.0	63.2	65.1
RM #345	2.5	6.0	5.3	5.0	4.0
Regina	2.1	--	1.9	1.4	1.7

Since 1976, the population of the City of Saskatoon has grown by an average of 2.5% annually. Over the same period of time, park visitation to Pike Lake Provincial Park has decreased on an average of 3% annually. Figure 3 shows the relationship of Saskatoon population growth to Pike Lake Provincial Park visitation since Department records started in 1963. From this graph it is obvious that various factors have been working to discourage visits to Pike Lake Provincial Park since the mid-1970's. This may reflect that problems with poor water quality and deteriorating park facilities are having a negative effect on park visitation.

A study on public awareness of recreation facilities in Saskatchewan carried out in the summer of 1982 by CanWest Survey Research Corporation, indicated that awareness of Pike Lake in the City of Saskatoon was high, with 73% of the population surveyed being aware of the park and 41% indicating that they had visited the park at least once.

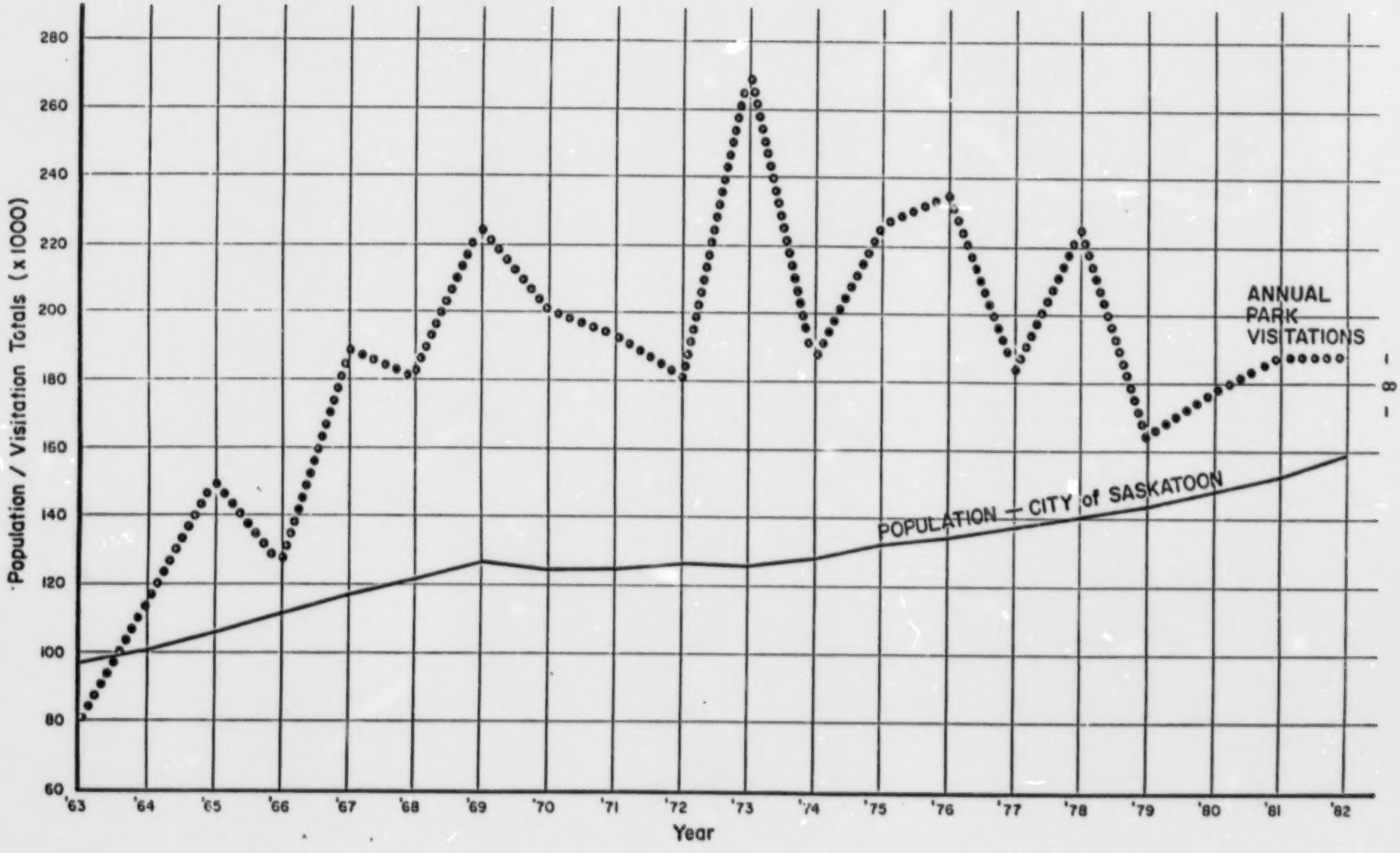


Figure 3: Comparison - Population of City of Saskatoon and annual park visitation to Pike Lake

1.11 Resource Use and Trends

Due to the limited size and physical nature of Pike Lake Provincial Park, the demand for resource use and extraction is minimal. At present, the major concern is the water supply. When the pumping station is expanded, through a joint venture with the Department of Agriculture and D.P.R.R., Pike Lake will be used as a water base for agricultural irrigation. In order to accommodate the future demand of water for irrigation, the pumping station has been designed to supply a farm irrigation component of 10 cubic feet per second. This is in addition to 4.5 cubic feet presently lost through evaporation, 1.5 cubic feet presently used for park irrigation, and allows an estimated 4 cubic feet for increased future irrigation of the park.

The amount of water pumped into Pike Lake may also be affected by a Ducks Unlimited project. Ducks Unlimited has proposed the construction of a dyke system running north and south immediately west of Isle de Thersa. The purpose of this project would be to manage the area east of the dyke as a waterfowl marsh in conjunction with Wildlife Development Fund Land located northeast of Pike Lake. If the dyke is constructed, lower volumes of water will be required to maintain recreational levels in the lake itself.

1.12 Issues and Concerns - 1983

- To meet the present demand for recreation and irrigation at Pike Lake, the water levels must be consistently maintained at an elevation slightly higher than the present levels.

  Implications:

  .there is a possibility of increased shoreline erosion by an increase of the water level;

  .there will be increased stress put on the existing impoundment structures, i.e. municipal dam which dams the north end of the lake.

- The overabundance of aquatic vegetation in Pike Lake reduces the aesthetic value and the recreation opportunities available in the water body.

- A parasitic, microscopic organism has become established in the waters of Pike Lake which discourages recreational activities in the water by causing a minor skin irritation commonly known as 'swimmers itch'.

- Some existing facilities are presently in a deteriorated condition and require upgrading or improvements to meet Public Health and Safety Standards, i.e. handicapped access.

2.1 Recommended Program

The management strategies for Pike Lake Provincial Park include a wide range of program elements ranging from resource management to recreation and administration. In general, the future management of the park is geared to the upgrading and development of recreation facilities both from the public and private sectors. Management of the natural resources is directed mainly to the stabilization of water levels and the problems of water quality in the lake. Major program elements are summarized under the following headings. A more detailed list of specific management strategies is included in Table 4.

a) Recreation Programs

Camping

According to the campground occupancy rates, the existing campground is adequate in size, and expansion is not recommended. Services in the form of campsites electrification and washrooms are sufficient to meet the standards of a serviced campground according to the proposed Campground Classification Scheme; however shower facilities at present are inadequate.

Picnicking

The park provides extensive opportunities for picnicking and no additional picnic areas are proposed. Picnic facilities are gradually being upgraded and efforts should continue to improve picnic tables, barbeques, washrooms, etc. in relation to the park colour scheme and general quality of construction. One additional picnic shelter is proposed.

Boating

The existing boat launch and docking facilities do not require expansion at the present time. Motor restrictions are in existence on the lake (10 mph) and a boat rental concession is presently operating near the beach area.

Swimming

Swimming in the lake is presently hindered by the quality of the water and construction of a swimming pool is recommended. Improvements are required to the bath/changehouse to ensure Public Health and Safety standards are met, i.e. handicapped access.

Playgrounds/Sports Areas

Playground areas in general require some upgrading and new creative play equipment is proposed for playgrounds in the core area and at the Recreation Hall. A sports field/games area is proposed near the Recreation Hall in close proximity to the campground. Other facilities such as the tennis court and ball diamond will be maintained as existing.

Interpretation/Trails

Interpretive programs will continue in the park; however they will be geared to self-guided trails in relation to established interpretive themes. The existing trail requires upgrading and expansion of trails will be considered if the marsh area is developed by Duck's Unlimited.

Park Recreation/Aquatic Programs

Various land and water-based recreation programs will be continued in the park. Renovations to the Recreation Hall should be completed to provide adequate indoor facilities for recreation programs and special events.

Winter Recreation

Cross-country ski trails will be established and a trails brochure printed to promote winter recreation in the park. Snowmobiling is restricted to designated areas only, i.e. gaining access to trapping areas.

All Terrain Vehicles

The use of trail bikes, dune buggies and all-terrain vehicles is prohibited in the park due to the sensitive nature of the dune environment.

b) Operation and Administration

Existing infrastructure requires some improvement in the form of pumping station expansion, parking lot construction at the Recreation Hall, pump house improvements and better maintenance of the sewage lagoon and dry waste disposal site. Expansion of existing facilities may also be required to supply services for private sector development.

The administration building is in the process of renovation and a newly designed park entry is proposed. Relocation of the existing staff quarters near the core area and the maintenance compound should be given future consideration, particularly if the marsh area is developed by Duck's Unlimited and interpretive programs are expanded.

c) Land Tenure

Due to the limited size of the park, further expansion of the cottage subdivisions is not recommended and no additional institutional camps will be permitted.

d) Resource Management

Water Level Control

Water levels are basically dependent on the pumping of water from the South Saskatchewan River. An expansion and modernization of the existing facilities is recommended to sustain the preferred level of 481.94 m (1581.25 ft.) F.S.L. with management practices consistent with maintaining that level or no less than 0.15 m (6 inches) below that level. Flood easements must be obtained from various property owners in order that the pumping operation receives the approval of the Department of Environment.

Water Quality

Management practices must be maintained to help control aquatic weed growth and the parasitic organism causing the 'swimmers itch' problem. Water quality should be monitored and various experimental techniques carried out to determine the most effective and safe method of attempting control of these problems.

Fisheries Management

A fisheries management program should be implemented in an attempt to prevent winterkill of the fish in Pike Lake. Once the lake levels are stabilized, the lake may have the potential to support a small sport fishery.

Wildlife Management

Trapping is permitted only as a management tool to control certain species and help to ensure a healthy balance of the wildlife populations. The policy of 'no hunting' in the park will be continued. Ducks Unlimited plan to manage the marsh area adjacent to the park for waterfowl production which will enhance marshland interpretation potential in the park.

Forestry Management

Due to the limited resource base of the park, logging is not an active management technique in the park. Selective cutting is carried out by park staff to remove old, dead or diseased specimens; however, natural areas in the park should not be subjected to tree culling. A tree planting/nursery program should be established for landscaping and afforestation purposes.

TABLE 4

RECOMMENDED PROGRAMS AND IMPLEMENTATION STRATEGY - SUMMARY

Program and Description	Priority	Implementation		
	High/Medium/Low	Phasing Year 1 2 3 4 5	Option Private/Public	Responsibility
Summer Recreation				
Trails and Interpretation				
-upgrade existing nature trail and relocate away from sewage lagoon area	medium	3	public	Region / Park Visitor Services
-when Ducks Unlimited project is complete, utilize the dyke to expand trails to the east side of Pike Lake	low	5	public	Region
Recreation Programs				
-complete renovations to the Recreation Hall	high	2	public	Region
-establish sports field/games area	medium	5	public	Region
-construct a Swimming Pool	high	2 3	public	Region
-beach improvements	medium	3	public	Region

TABLE 4

RECOMMENDED PROGRAMS AND IMPLEMENTATION STRATEGY - SUMMARY

Program and Description	Priority High/Medium/Low	Implementation		
		Phasing Year 1 2 3 4 5	Option Private/Public	Responsibility
-upgrade existing golf course and build clubhouse	high	1 2	private	Construction Services
-construct creative playgrounds at core area picnic area and the Recreation Hall	low	4 5	public	Region
-upgrade remaining playgrounds in the north picnic area and campgrounds	low	4 5	public	Region
-construct picnic shelter	low	5		
-upgrade existing picnic facilities	high	1	public	Region
Winter Recreation				
-provide cross-country ski trails	high	1	public	Region/ Park Visitor Services

TABLE 4

RECOMMENDED PROGRAMS AND IMPLEMENTATION STRATEGY - SUMMARY

Program and Description	Priority	Implementation		
	High/Medium/Low	Phasing Year 1 2 3 4 5	Option Private/Public	Responsibility
Visitor Services				
Camping				
-upgrade/construct campground facilities to meet campground standards of a Fully Serviced Campground	medium	3	public	Region
Information				
-provide brochure display unit in administration building	medium	2	public	Region) Park
-construct park entry information board	medium	3	public	Region) Visitor
-cross country ski trails brochure	high	2	public	Region) Services
Food Concession				
-upgrade existing food concession/ store	medium	3 4	private	Construction Services
Bath/Changehouse				
-upgrade existing bath/changehouse facility	high	2	public	Region

TABLE 4

RECOMMENDED PROGRAMS AND IMPLEMENTATION STRATEGY - SUMMARY

Program and Description	Priority High/Medium/Low	Implementation		
		Phasing Year 1 2 3 4 5	Option Private/Public	Responsibility
Visual Landscape				
-landscape areas:				
.administration building	high	1	public	Region
.park entry	medium	2	public	Region
.recreation hall	low	4	public	Region
-plant trees to screen unsightly areas	medium	2 3	public	Region
Water				
-pumping station expansion	high	1	public	Region
-establish program to ensure lake levels are consistently maintained	high	1	public	Region
Land Acquisition				
-obtain land control for properties along lakeshore	high	1	public	Parks & Lands
Operation and Administration				
-complete renovations to administration building	high	1	public	Region

TABLE 4

RECOMMENDED PROGRAMS AND IMPLEMENTATION STRATEGY - SUMMARY

Program and Description	Priority	Implementation		
	High/Medium/Low	Phasing Year 1 2 3 4 5	Option Private/Public	Responsibility
Subdivisions				
-investigate alternatives for supplying Eastbank Subdivision with water	medium	3 4	public	Region/ Construction Services
Resource Management				
Fisheries				
-implement recommendations as specified on Fisheries Program Guidelines	medium	2 3	public	Region/ Fisheries Branch
Forestry				
-establish tree planting/nursery program	medium	4 5	public	Region/ Forestry Branch

TABLE 4

RECOMMENDED PROGRAMS AND IMPLEMENTATION STRATEGY - SUMMARY

Program and Description	Priority	Implementation		
	High/Medium/Low	Phasing Year 1 2 3 4 5	Option Private/Public	Responsibility
Infrastructure				
-park entry improvements	high	1	public	Region
-construct parking lot at Recreation Hall	medium	4	public	Region
Water Supply				
-pumphouse improvements	medium	3	public	Region
Water Irrigation				
-install golf course irrigation system (see golf course)	high	1 2	private	Construction Services
Sewage				
-sewage lagoon improvements	medium	3 4	public	Region
Dry Waste Disposal				
-relocate existing site outside the park	medium	5	public	Region

Grazing/Haying

Due to the limited land base of the park, leases for grazing are not permitted and haying is not allowed.

Vegetation/Visual Landscape

Random plantings and the establishment of screening hedgerows are required to perpetuate the natural setting of the park. Any rare or unique vegetative species identified in the park are to be protected.

Shoreline Erosion

In areas where shoreline erosion is evident and presents a hazard to the safety and well-being of park users, some preventative measures will be taken either by the park staff or in conjunction with a cottage owner on leased property.

Soil Erosion

Due to the sensitive nature of the dune soils, use of the dune areas is to be restricted to low density activities to prevent the destruction of natural vegetation and consequent erosion of soils.

Fire Protection

Fire protection measures are being implemented within the park and involve clearing fireguards, establishing fire exits, maintaining fire fighting equipment and establishing a fire contingency plan. An agreement should be arranged between the local R.M., park administration staff, and cottage owners concerning fire protection in cottage subdivision areas.

2.2 Concept Development Plan

Proposed development for Pike Lake Provincial Park has been identified in Table 4. Figure 4 identifies all new facilities. A concept development plan identifying all existing and proposed development is appended to this report.

2.3 Park Zoning

According to the Park Classification and Zoning Scheme, Pike Lake Provincial Park has been divided into only two major zones: Natural and Intensive Development. The Natural Zone consists of lands set aside for low density, nature-oriented recreational activities or nature interpretation. The Intensive Development Zone is to provide lands for a wide range of recreational opportunities for moderate to high use in a natural setting. These two zones are identified on the Zoning Plan (see Figure 5) and described in more detail as follows:

PIKE LAKE PROVINCIAL PARK

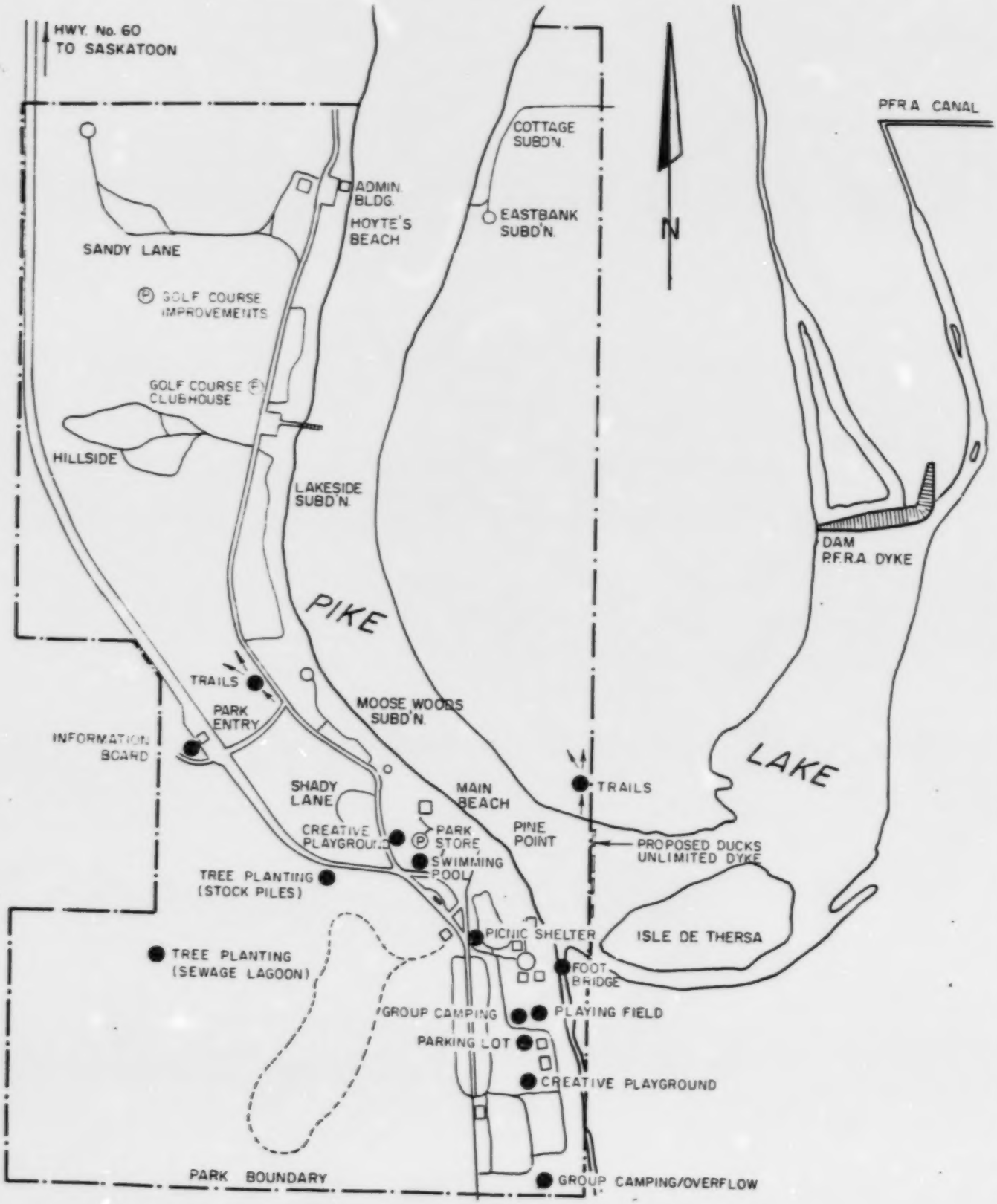


Figure 4: Proposed Development

LEGEND

Ⓟ PROPOSED PRIVATE SECTOR DEVELOPMENT

● PROPOSED DEPARTMENT DEVELOPMENT

PIKE LAKE PROVINCIAL PARK

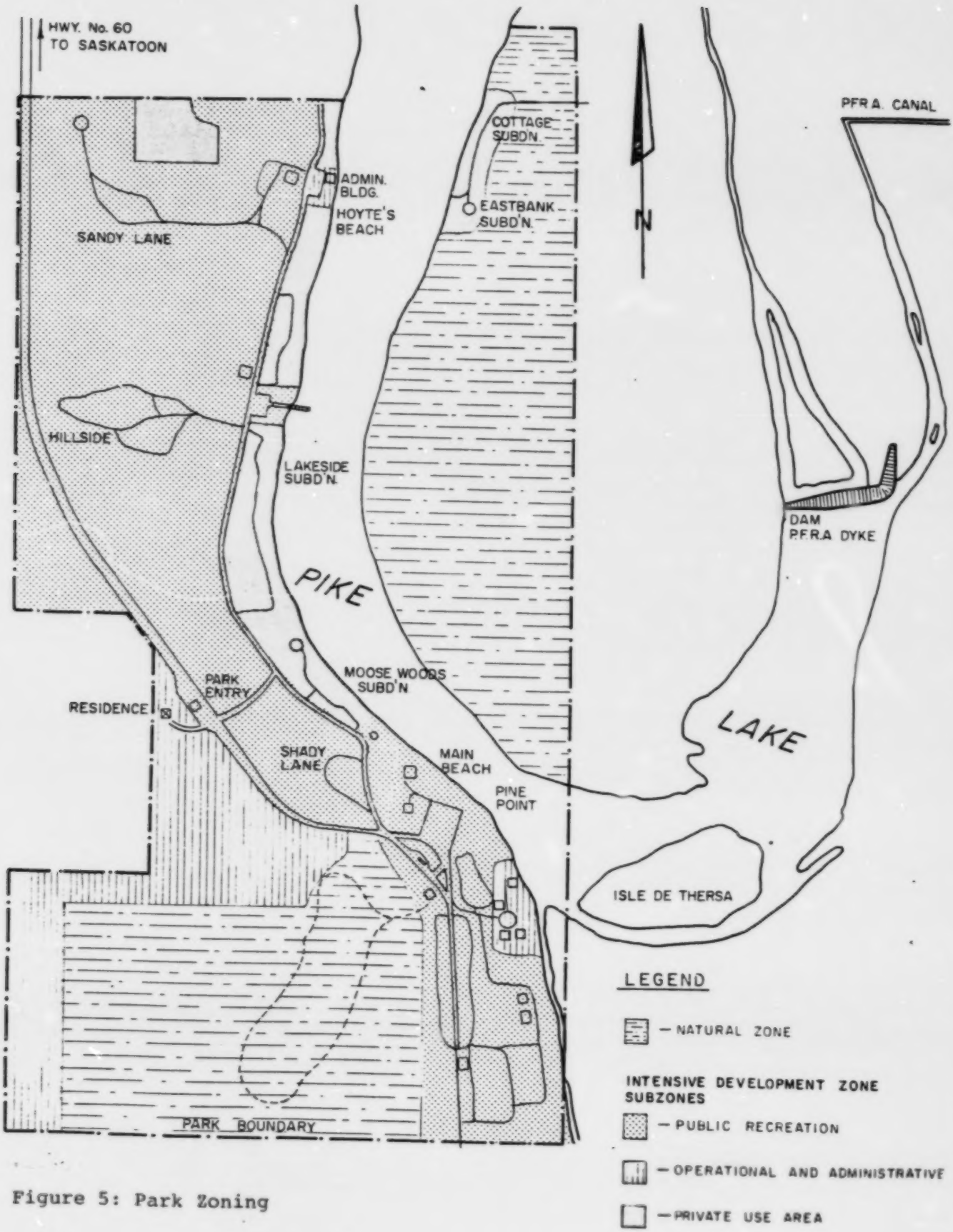


Figure 5: Park Zoning

Natural Zone

Purpose: To set aside lands with particular scenic or scientific attributes for low-density, nature-oriented recreational activities, or to create natural buffers between the various developed areas within the park.

Management: The emphasis will be on nature-oriented activities. Activities appropriate to the zone could include non-serviced camping, hiking, interpretive walks, pleasure driving, fishing, boating, or canoeing. Only facilities compatible with these activities will be provided.

Intensive Development Zone

Purpose: To provide lands capable of supporting a wide range of recreational opportunities for moderate to high use in a natural setting.

Visitor services, accommodations and area administration facilities are to be located in this zone.

Management: There may be considerable man-made developments in this zone. Landscape alterations may be made to increase the carrying capacity of these areas.

Specialized facilities such as golf courses and swimming pools may be developed, where appropriate, taking into consideration the location of similar facilities outside the park and future space requirements for other more related activities.

The development zone will be further broken down into the following three subzones:

a) Public Recreation
Facilities designed to accommodate intensive uses will be located in this sub-zone.

b) Operational and Administrative
Developments and facilities for the operation and maintenance of the park will be located in this sub-zone (staff housing, offices, maintenance yards, garbage dumps, etc.).

c) Private Use Areas (non-conforming)
This includes areas and facilities held on these by private individuals or groups for certain uses (cottages, institutional camps, houseboats, boat houses etc.).

2.4 Implementation Strategy

Implementation of Park Management Strategies requires the co-operative efforts of all Branches in the Department. For individual program elements, an implementation strategy is identified by Table 4 in terms of development priorities, phasing and responsible agents. In addition, an overall implementation process for recreation facility programs is outlined by Figure 6. This breaks down the various stages of the process and identifies the concerned Branches at different stages.

2.5 Private Sector Investment

Opportunities for private sector investment in Pike Lake Provincial Park have been identified in Table 4, and are discussed further under the following headings:

Golf-Course/Clubhouse

The existing 9-hole sand green course has been maintained at a minimal level for a number of years. Due to the poor quality of the course and resulting low utilization, user fees have not been collected. If improvements were made to the course, it is felt Pike Lake could attract a significant number of golfers from the City of Saskatoon, making the facility a viable operation.

It is recommended that a Golf Course Development Project be solicited to include golf course expansion, irrigation and the development of a clubhouse.

Park Store

The existing store is presently owned by the Department and leased to the operator. The building itself is poorly designed and presents several maintenance problems. The storage area is limited and improvements are needed. It is recommended that the ownership and operation of the park store be solicited as a Tender Project.

Boat Rental

A private operator presently provides a small boat rental concession at the beach area. Considering the size of Pike Lake itself, this concession appears adequate to serve the park at the present time.

Figure 6: Implementation Process

FUNCTION - THE RECREATION FACILITY PROGRAM
FIGURE 1: PHASES IN IMPLEMENTATION

	1. PLANNING				2. BUDGETTING	3. CONSTRUCTION
SUBFUNCTION	a) .Long-term facility requirements forecast	b) .Park Management Strategies	c) .Site design/facility concept plans	d) .General requirement report	.Annual budget request	Facilities/ Services
ACTIVITY	a. Review of existing land resource and recreation plans b. Assemble requirements for areas without plan coverage c. Priorize projects over a ten year period d. Annual update of forecast	a. Prepare PMS for each park b. Annual strategy/ plan update c. Priorize public/ private sector development opportunities	a. Prepare site design/facility concept plan b. Estimate conceptual cost c. Determine level of services required d. Submit concept plan with costs to Field Services for comment	a. Prepare general requirement report b. Obtain Environmental approval for development program c. Estimate cost d. Submit site design plan and general requirement report for D.P.R.R. approval e. If private sector, tender project	a. Prepare budget request b. Submit budget request to Capital Review Committee and DPRR approval c. Submit budget request to Treasury Board for approval	a. Prepare detailed design/construction drawings and detailed requirement report b. Submit construction drawings & detailed requirement report for DPRR approval & release of funds c. Arrange contracts d. Supervise construction
RESPONSIBILITY	a.b. Parks & Lands,* Field Services c.d. Parks & Lands,* Field Services, Construction Services	a. Parks & Lands,* Field Services, Construction Services Program Branches b. DPRR - all program Branches & Field Services c. Parks & Lands,* Field Services, Construction Services	a. Parks & Lands,* Construction Services, Field Services b. Construction Services c. Parks & Lands,* Field Services, Construction Services d. Parks & Lands	a. Parks & Lands,* Field Services, Construction Services b. Parks & Lands c. Construction Services d. Parks & Lands e. Visitor Services	a. Construction Services* Field Services, Parks & Lands b. Construction Services c. D.P.R.R.	a. Construction Services* Parks & Lands, Field Services b.c.d. Construction Services, Field Services

* Lead Agency

PARKS AND LANDS BRANCH
OCTOBER, 1983

Summer Recreation **PROGRAM GUIDELINE** Trails & Interpretation

INVENTORY AND STATUS

-there is one existing nature trail running from the campground entry office into the dune area
-one seasonal park interpreter
-participation by school groups has increased by 42% over the last three years (see Appendix V)
-non-school group participation has increased 71% since 1977
-local School Board has expressed their intentions of increasing outdoor interpretation programs which will put added pressure on existing facilities
-interpretation in Recreation Parks is geared to self-guided nature trails
-interpretive themes for Pike Lake include: Aeolian Processes
Aspen Grove Community
Fluvial Processes (meanders and oxbows)
-existing nature trail has been poorly maintained and is not properly signed at present

Potential:
-the proposed Wildlife Development Fund Land/Ducks Unlimited project will provide an excellent opportunity for wetlands interpretation once it is complete

MANAGEMENT OBJECTIVES

-improve existing facilities and provide self use interpretive facilities to accommodate increased participation

STRATEGIES

-an interpretive program will be continued in the park for the months of May and June to accommodate school groups and special interest groups

-the existing nature trail will be upgraded and the trail system expanded to provide for increased hiking and nature interpretation

-A wetland interpretive program is being considered. Should the adjacent marsh area be developed by Ducks Unlimited, the interpretive program will be designed to incorporate the Ducks Unlimited project in a self-guided trail

-the existing nature centre shall remain adjacent to the recreation hall with improvements and changes made to the present displays

REFERENCES

D.P.R.R. Park Visitor Services: Number of Participants in Saskatchewan Provincial Parks Program. 1977-1982

RECOMMENDATION FOR FURTHER STUDY

mmer Recreation **PROGRAM GUIDELINE** Recreation/Aquatic Programs

INVENTORY AND STATUS

-major programming emphasis is on land and water-based recreation programs
-a special senior citizens program was operated during the 1981 and 1982 summer seasons

-beginning in the 1983 summer season, a land-based recreation program was implemented and directed toward the general public

-participation in recreation programs to date have indicated a positive response to the programs (see Appendix V)

-four aquatic staff and one recreation staff member provide summer programs

-aquatic programs include: Red Cross Swim Program; Royal Swim Program; Red Cross Small Craft Program; and Recreational Small Craft Program (canoeing, sailing, board sailing and snorkeling)

-land-based programs include: crafts; sports and games; campfires; and other special events

Constraints:
-poor water quality in Pike Lake discourages water-related activities

MANAGEMENT OBJECTIVES

-continue to upgrade and expand recreation programs and facilities in the park

STRATEGIES

-complete renovations to Recreation Hall

-construct swimming pool

-establish sports field/games area

-attempt to improve water quality of Pike Lake

REFERENCES

-D.P.R.R. Park Visitor Services: Number of Participants in Saskatchewan Provincial Parks Program. 1977-1982

COMMENDATION FOR FURTHER STUDY

-water quality monitoring program

Summer Recreation **PROGRAM GUIDELINE** Golf Course

INVENTORY AND STATUS

-9 hole, sand green course
-no irrigation
-no clubhouse
-a small, open shelter exists at the beginning of the course
-no fees or registration required
-park staff plan to renovate golf course shelter slightly to provide a closed-in building which may be utilized as a cross-country ski shelter in winter

Potential:

-soil conditions (sand) should be conducive to irrigation

MANAGEMENT OBJECTIVES

-continue to provide golfing as a recreational activity

STRATEGIES

-upgrade existing golf course, and build clubhouse by soliciting project as a Commercial Development Opportunity 1984

REFERENCES

-field investigations

RECOMMENDATION FOR FURTHER STUDY

Summer Recreation **PROGRAM GUIDELINE** Playgrounds

INVENTORY AND STATUS

-four playground locations
  -north picnic area
  -core area picnic area
  -campground
  -recreation hall
-equipment is multicolored and in most cases old, outdated and in poor condition

MANAGEMENT OBJECTIVES

-improve the playground equipment to provide a more modern and natural creative play experience

STRATEGIES

-replace existing equipment at the Recreation Hall and core area picnic area with more modern creative play equipment
-upgrade remaining playgrounds at north picnic area and campgrounds

REFERENCES

-field investigations

RECOMMENDATION FOR FURTHER STUDY

Summer Recreation **PROGRAM GUIDELINE** Picnic Grounds

INVENTORY AND STATUS

-sufficient area designated for picnic grounds
-in some cases, picnic facilities are in poor condition but are gradually being replaced or upgraded
-one picnic shelter in the core area

Potential:

-picnic grounds in the core area could be expanded if the maintenance yard is relocated (see 3.9 - Operation and Administration)

Constraints:

-picnic grounds in the north tend to be isolated and receive limited use

MANAGEMENT OBJECTIVES

-continue to provide a pleasant, natural setting for picnicking and other forms of outdoor recreation

STRATEGIES

-continue to upgrade or replace existing facilities as the need arises
-provide additional picnic shelter

REFERENCES

RECOMMENDATION FOR FURTHER STUDY

Summer Recreation **PROGRAM GUIDELINE** Other

INVENTORY AND STATUS

-tennis court, baseball diamond, boat launch, beach and horseshoe pits are all in relatively good condition
-boating is restricted on the lake to motors not exceeding 10 H.P.
-boat rental of canoes and paddle boats
-a recommendation has been made that all motorboat use on the lake be eliminated because of the limited size of the lake

MANAGEMENT OBJECTIVES

-provide a variety of good quality recreation facilities for the park users

STRATEGIES

-maintain existing facilities and make improvements when necessary

REFERENCES

-field investigations

COMMENDATION FOR FURTHER STUDY

-investigate need to eliminate motorboard use on the lake

Winter Recreation PROGRAM GUIDELINE and Interpretation

INVENTORY AND STATUS

-no established winter recreation or interpretation program
-park visitors utilize campground and golf course for x-country skiing; however no trails are established
-steep hill near the park entry is utilized as a toboggan slope by park visitors; however is not designated as such
-a portion of Recreation Hall is winterized

Potential:

-sufficient area for x-country skiing is available

MANAGEMENT OBJECTIVES

-initiate development to accommodate the expressed demand for x-country trails as well as other winter activities

STRATEGIES

-provide cross-country ski trails
-utilize the existing golf course shelter as ski shelter
-utilize recreation hall for winter recreation activities

REFERENCES

-park staff

RECOMMENDATION FOR FURTHER STUDY

Park Visitor Services **PROGRAM GUIDELINE** Camping

INVENTORY AND STATUS

-187 regular campsites, 3 group camping areas, 1 overflow

-total number of campers has decreased in the last 5 years (see Appendix VI)
-occupancy rates are declining (July-August occupancy 54%)
-length of stay for campers has remained relatively constant

-49% of campsites are electrified

-the existing service centre provides adequate shower facilities to service 150 campsites

Constraints:
-expansion of existing campground restricted due to surrounding land use

MANAGEMENT OBJECTIVES

-improve campground accommodation in relation to proposed campground standards

STRATEGIES

-upgrade/construct campground facilities to meet campground standards of a Fully Serviced Campground (once Campground Standards and Classification is adopted by Department)

REFERENCES

-Camping Permit Analysis Statistics
-D.P.R.R. Visitation Reports, Saskatchewan Provincial parks, Recreation Sites, Campgrounds and Picnic Sites

COMMENDATION FOR FURTHER STUDY

Park Visitor Services **PROGRAM GUIDELINE** Food Concession/Store

INVENTORY AND STATUS

-a fast food concession operates near the beach area
-cement block building
-maintenance problems due to structure of the building
-limited storage space

MANAGEMENT OBJECTIVES

-continue to provide a food concession and store facility for visitors to the park

STRATEGIES

-upgrade concession/store facility

REFERENCES

-field investigation

RECOMMENDATION FOR FURTHER STUDY

Park Visitor Services **PROGRAM GUIDELINE** Information

INVENTORY AND STATUS

-adequate signing program for traffic circulation
-brochures consist of - park brochure
- natural history
-campground layout map

MANAGEMENT OBJECTIVES

-encourage awareness of the park and park facilities by improving methods of displaying or circulating information

STRATEGIES

-provide brochures display unit in the Administration Office
-park entry information board
-print cross-country ski trails brochure

REFERENCES

-field investigations

RECOMMENDATION FOR FURTHER STUDY

Park Visitor Services **PROGRAM GUIDELINE** Rental Accommodation

INVENTORY AND STATUS

Constraints:

(according to the Classification of Provincial Parks, 1983, Draft)
rental accommodation is not encouraged in Recreation Parks

MANAGEMENT OBJECTIVES

STRATEGIES

REFERENCES

COMMENDATION FOR FURTHER STUDY

Park Visitor Services **PROGRAM GUIDELINE** Bath/Changehouse

INVENTORY AND STATUS

-existing facilities do not meet public health and safety standards (i.e. no handicapped facilities)
-a budget request has been submitted for renovation to the building

MANAGEMENT OBJECTIVES

-provide modern facilities for the health and safety of the park users

STRATEGIES

-upgrade existing facility

REFERENCES

-field investigations

RECOMMENDATION FOR FURTHER STUDY

Subdivision PROGRAM GUIDELINE

INVENTORY AND STATUS

-there are 138 private cottage holdings located within the park in three subdivision areas
-increased demand by cottage owners on the east side of the lake to be provided with a water line from west side
-Eastbank Subdivision could be supplied with water from the administration office water system if the subdivision water demand is small (i.e. 3 or 4 water points)
-a previous shallow test well constructed in the early seventies pumped at approximately 10 Igm but had a high iron content and was pulled

Constraints:

-a wide bore well constructed on the east side of the lake would probably supply the subdivision with water having a moderate content of iron
-a lake intake system may not be satisfactory because of the chemical treatment for "itch" and weeds

MANAGEMENT OBJECTIVES

-continue to provide a favourable environment for the park cottage subdivision users
-restrict expansion of cottage subdivisions due to the limited size of the lake

STRATEGIES

-investigate methods of supplying water to Eastbank Subdivision
-Alternative 1:
  -underwater water main crossing the lake, chlorination equipment, larger supply pump and possibly an additional iron filter

-Alternative 2:
  -develop a seperate water supply on the east side of the lake

REFERENCES

RECOMMENDATION FOR FURTHER STUDY

-further examination of subdivision water supply possibilities

Institutional Camps PROGRAM GUIDELINE

INVENTORY AND STATUS

-there is one institutional camp operated by the Girl Guide organization

MANAGEMENT OBJECTIVES

-due to the limited land base of the park, development of additional institutional camps is discouraged

STRATEGIES

REFERENCES

-field investigations

RECOMMENDATION FOR FURTHER STUDY

Resource Management **PROGRAM GUIDELINE** Fisheries

INVENTORY AND STATUS

-fishing not an active recreational activity
-lake sustains a population of Northern Pike
    -small in size and number
    -subject to winterkill due to oxygen depletion
-decomposition of aquatic weed growth reduces oxygen levels in the lake
-park staff are investigating methods to aereate the lake to prevent winterkill
-a report on the Pike Lake Fisheries Resource is attached (see Appendix VIII)

Constraints:

-poor water quality and unstable lake levels present unfavourable conditions for sport fish populations

MANAGEMENT OBJECTIVES

-continue to investigate various methods of improving the natural habitat for sport fish production

STRATEGIES

-see attached report

REFERENCES

Beard, W.M. 1983 - Pike Lake Provincial Park Report on Management Strategies for the 80's, 37 pp
DPRR Staff

RECOMMENDATION FOR FURTHER STUDY

-as outlined in strategies

Resource Management **PROGRAM GUIDELINE** Forestry

INVENTORY AND STATUS

-limited forest cover on the east side of the lake since most of the land base is dune area
-Kelsey students in the past planted a variety of species on the east side of Pike Lake
-after the program was discontinued, no further planting was done and plantations have never been managed
-no logging occurs
-the plantations may receive some attention if the park gets assistance from a correctional crew
-old or dead trees are removed by park staff when necessary
-no tree nursery

Constraints:

-limited land base
-light, sandy soils

MANAGEMENT OBJECTIVES

-maintain existing forest cover as a resource base for the park

STRATEGIES

-remove old, dead or diseased trees where necessary in Intensive Development Zone
-maintain tree planting/nursery program

REFERENCES

-DPRR Staff
-field investigations

RECOMMENDATION FOR FURTHER STUDY

Resource Management **PROGRAM GUIDELINE** Wildlife

INVENTORY AND STATUS

-the limited land base supports only transient populations of large animals - deer in winter
-no hunting is allowed in the park
-beaver control is carried out when necessary
-muskrat control program is on-going - trapping done by a local farmer
-upland game birds include sharp-tailed grouse
-pheasants have occasionally been stocked in the area and have brought off broods
-marsh areas are extremely rich in many species of marsh wildlife
-Ducks Unlimited plan to manage the Wildlife Development Fund property adjacent to the park

Constrairts:

-limited land base
-restricted vegetative cover in upland dune areas

MANAGEMENT OBJECTIVES

-sustain existing wildlife populations in the park and enforce management strategies when necessary
-develop nature interpretation and excellent wildlife viewing opportunities in the marsh

STRATEGIES

-continue "no hunting" policy
-continue trapping as a management tool to control certain wetland species
-encourage the production of waterfowl through co-operative efforts with Ducks Unlimited
-encourage winter wildlife viewing by setting up deer feeding station

REFERENCES

DPRR Staff
Field Investigations
Ducks Unlimited

COMMENDATION FOR FURTHER STUDY

Resource Management **PROGRAM GUIDELINE** Visual Landscape

INVENTORY AND STATUS

-random planting around buildings is adequate in most areas
-needs screening around gravel pit, stock piles and sewage lagoon
-landscape is needed at - administration building
- recreation hall
- entry kiosk
-the park appears to have an ongoing planting program which should continue and be encouraged

Constraints:

-moisture regime and soil characteristics restrict vegetative growth in some areas of the park

MANAGEMENT OBJECTIVES

-maintain the aesthetics and natural environment setting of the park for the enjoyment of the park users

STRATEGIES

-landscaping - administration building
- park entry
- recreation hall
-plant trees to screen unsightly areas

REFERENCES

-field investigations
-DPRR staff

RECOMMENDATION FOR FURTHER STUDY

Resource Management **PROGRAM GUIDELINE** Vegetation

INVENTORY AND STATUS

-the park provides a variety of different vegetative communities
  -shrub and dune vegetation
  -swampy, valley bottom woodland
  -drier upland woodlots
  -wetland communities
  -mixed plantation

Constraints:

-moisture regime and soil characteristics restrict vegetative growth in some areas of the park

MANAGEMENT OBJECTIVES

perpetuate the natural vegetative communities of the park for the education and enjoyment of the park users

STRATEGIES

-restrict dune area to low-intensity activities
-protect any rare or unique vegetative species established in the park if identified

REFERENCES

-field investigations

COMMENDATION FOR FURTHER STUDY

-inventory of floral species

Resource Management **PROGRAM GUIDELINE** Water Supply

INVENTORY AND STATUS

-water is presently pumped from the South Saskatchewan River to maintain water levels in Pike Lake
-existing pumping operation is ineffective when water levels in the River are low resulting in fluctuating water levels in Pike Lake
-an expansion of the existing pumping station is proposed to stabilize lake levels at 481.94 m
-at present, the department has not obtained the necessary licence to operate the river pumping station and divert river water to maintain the lake level at elevation 481.94 meters (see Land Acquisition)
-permanent stabilization of lake levels at the proposed elevation may result in increased shoreline erosion and groundwater level changes which in turn may have some detrimental effects on the park (see references below)
-Ducks Unlimited project may affect the amount of water required to maintain lake levels

Constraints:

-as above

MANAGEMENT OBJECTIVES

-obtain permit for pumping operation and maintain lake levels at established desired elevation

STRATEGIES

-pumping station expansion
-establish program to ensure lake levels are consistently maintained

REFERENCES

Beard, W.M. 1983 Pike Lake Provincial Park, Report on Management Strategies for the 80's; 37 pp
Construction Management Services

RECOMMENDATION FOR FURTHER STUDY

-an operational strategy for the Pike Lake water supply should be established

Resource Management **PROGRAM GUIDELINE** Water Quality

INVENTORY AND STATUS

-water quality of Pike Lake is poor - problem with aquatic weed growth and 'swimmers' itch' parasite
-control program 1983:
  -treating 1 acre along the beach area with copper sulfate 2-4 times during the summer to reduce 'swimmers' itch' problem
  -treating 25 acres along subdivision areas with "Reglone A" to an average depth of 7 feet to reduce aquatic plant growth
  -trying an experiment with screening to reduce aquatic weeds

Constraints:

-physical nature of the lake makes it conducive to extreme eutrophication

MANAGEMENT OBJECTIVES

-improve water quality conditions to provide a healthy and attractive environment for water-based activities in the park

STRATEGIES

-continue control program for aquatic weeds and "swimmers' itch"
-continue to investigate other methods of controlling problems

REFERENCES

DPRR staff
Beard, W.M. 1983 Pike Lake Provincial Park, Report on Management Strategies for the 80's; 37 pp

RECOMMENDATION FOR FURTHER STUDY

-research proposal on sediment-related pollution by Saskatchewan Research Council (presently under negotiation)

Resource Management **PROGRAM GUIDELINE** Shoreline

INVENTORY AND STATUS

-much of the shoreline along the east side of the lake is inaccessible
-west shoreline is dominated by subdivision development
-boat launch provides public access to lake
-400 m of improved beach
-some cottage owners have complained of shoreline erosion occurring as a result of wave action

-increased wave action caused by motor boats may contribute to shoreline erosion problems

MANAGEMENT OBJECTIVES

-provide the public with access to the lake in order to appreciate and enjoy water-related activities
-provide a safe and attractive shoreline area

STRATEGIES

-maintain existing facilities
-attempt to reduce shoreline erosion where it may prove detrimental or dangerous to public safety and well-being
-encourage cottage owners to practice shoreline erosion control measure where problems exist on leased property

-some assessment should be made of the possible increase in severity of wave action resulting from chemical or mechanical removal of aquatic vegetation
-some assessment should be made concerning wave action caused by motor boat use on the lake

REFERENCES

Field investigation
D.P.R.R. staff

RECOMMENDATION FOR FURTHER STUDY

Resource Management **PROGRAM GUIDELINE** Historical/Archaeological/ Cultural

INVENTORY AND STATUS

-no areas have been identified within Pike Lake Provincial Park as being of historical, archaeological or cultural significance

MANAGEMENT OBJECTIVES

STRATEGIES

REFERENCES

RECOMMENDATION FOR FURTHER STUDY

-further investigation of historical, archaeological and cultural aspects of the area (request made to Department of Culture and Recreation)

Resource Use **PROGRAM GUIDELINE** Gravel Extraction

INVENTORY AND STATUS

-no gravel extraction is being carried out at Pike Lake Provincial Park

MANAGEMENT OBJECTIVES

-due to the limited size of the park, gravel extraction will not be permitted

STRATEGIES

REFERENCES

RECOMMENDATION FOR FURTHER STUDY

Resource Use **PROGRAM GUIDELINE** Oil and Gas

INVENTORY AND STATUS

-there is no oil or gas exploration or extraction being carried out within Pike Lake Provincial Park

MANAGEMENT OBJECTIVES

STRATEGIES

REFERENCES

RECOMMENDATION FOR FURTHER STUDY

Resource Use **PROGRAM GUIDELINE** Grazing and Haying

INVENTORY AND STATUS

-there is no grazing or haying being carried out within Pike Lake Provincial Park

MANAGEMENT OBJECTIVES

-due to the limited size of the park, grazing and haying will not be permitted

STRATEGIES

REFERENCES

COMMENDATION FOR FURTHER STUDY

Land Acquisition PROGRAM GUIDELINE

INVENTORY AND STATUS

-when the lake is stabilized at the elevation of 481.94 m (1581.25 ft) F.S.L. some properties not owned by D.P.R.R. (outside of the park) will receive minimal flooding
-flood easements must be obtained in order that the pumping operation at Pike Lake be legally licensed

MANAGEMENT OBJECTIVES

-ensure that the pumping operation at Pike Lake is legally licensed by the Department of Environment

STRATEGIES

-obtain flood easements on the following properties:

NAME	(ha) flooded at F.S.L.
George Harvey	.51
Boy Scouts of Canada	8.36
Ethel Katzman	2.18
Synod of Diocese of Sktn.	.10
Elvin O. Dahlen	14.09
" " "	.17
" " "	8.54
Richard Kont Brace	13.02
Glen Gerald Pippin	.10
Harvey Ralph Pippin	.24
Joseph D. Kinzie	1.52
	48.83

(purchase of an entire parcel may be considered)

REFERENCES

DPRR staff
Department of Agriculture

COMMENDATION FOR FURTHER STUDY

Operation & Administration **PROGRAM GUIDELINE**

INVENTORY AND STATUS

-existing administration office is in need of renovations - budget request has been submitted for these renovations
-staff housing is felt to be adequate and consists of:
- 1 trailer - sleeps 6
- 1 new trailer - sleeps 3
- house - sleeps 3
- house - resource officer
- 1 cook shack

-staff housing, for the most part, is located adjacent to maintenance complex
-the park may receive additional labour services for park maintenance from a correctional crew out of Saskatoon

MANAGEMENT OBJECTIVES

-provide adequate, safe and pleasant surroundings and facilities for resident and non-resident park staff

STRATEGIES

-complete renovations to administration building
-maintain staff housing in its present condition until staff housing policy is established by the Department
-if present facilities are retained, housing units should eventually be relocated away from campground and picnic areas
-the maintenance complex should also eventually be relocated away from the campground/picnic area not only to improve aesthetics and increase area for recreational purposes, but also to ensure the safety of park users

REFERENCES

DPRR staff
field investigation

RECOMMENDATION FOR FURTHER STUDY

-relocation of these facilities is not imperative at present and the issue should be re-examined when the Ducks Unlimited Project is complete

Protection & Security **PROGRAM GUIDELINE**

INVENTORY AND STATUS

-there are numerous fire guards established throughout the park; however, not all have been properly maintained
-a previous picnic/camping area has been blocked off due to security problems in the past
-the Delisle Fire Department has offered to work out a contingency plan with the park to ensure proper fire control
-the park plans to equip one of its own trucks with water tank to also be used for fire control

MANAGEMENT OBJECTIVES

-ensure the safety and well-being of all park visitors and residents through the maintenance of proper security and protection measures

STRATEGIES

-continue to reduce access to area where security and vandalism is of major concern
-ensure that a proper fire contingency plan is in effect
-ensure park rules and regulations are enforced

REFERENCES

DPRR staff

COMMENDATION FOR FURTHER STUDY

Infrastructure **PROGRAM GUIDELINE** Circulation & Parking

INVENTORY AND STATUS

-parking lot in core area is reported as being sufficient in size for present use of the park
-a small parking lot is required by the Recreation Hall and Nature Centre
-circulation in the campground has been a problem, but difficulties are presently being addressed by the park staff and a new numbering system will be established
-traffic flow at entry office needs to be redirected and properly signed

MANAGEMENT OBJECTIVES

-provide an efficient circulation pattern for traffic within the park as well as supply adequate parking areas for the convenience of the park users

STRATEGIES

-ensure roads are adequately signed and maintained
-parking lot at Recreation Hall
-improvements to park entry

REFERENCES

Field investigation

RECOMMENDATION FOR FURTHER STUDY

Infrastructure **PROGRAM GUIDELINE** Water Supply

INVENTORY AND STATUS

-a domestic water supply is pumped from wells
-the existing water treatment plant, located west of the campground, is subject to vandalism and should be relocated in an expanded distribution pumphouse at the reservoir, which is near the bath/changehouse
-the present core area water system adequately services the existing facilities, although the water treatment equipment is operating at full capacity

MANAGEMENT OBJECTIVES

-ensure that essential services are provided for the park users

STRATEGIES

-pumphouse improvements
-expansion of existing facilities to service new developments as they occur

REFERENCES

Field investigations
DPRR staff

COMMENDATION FOR FURTHER STUDY

Infrastructure **PROGRAM GUIDELINE** Water Irrigation

INVENTORY AND STATUS

-irrigation of the core area is presently carried out
-there is a demand for agricultural irrigation from Pike Lake
-proposed new pumping facility is designed to accommodate a future irrigation demand -
    -farm irrigation component of 10 cubic ft. per second
    -golf course irrigation component of 4 cubic ft. per second
-it has been identified that irrigation of the Recreation Hall area could affect ground water levels in that area and cause damage to existing structures

Constraints:

-irrigation supply is dependent on the expansion of the existing pumping facilities

MANAGEMENT OBJECTIVES

STRATEGIES

-golf course irrigation (see Summer Recreation)

REFERENCES

Beard, W.M. 1983 Pike Lake Provincial Park, Report on Management Strategies for the 80's; 37 pp
Construction Management Services

COMMENDATION FOR FURTHER STUDY

Infrastructure **PROGRAM GUIDELINE** Sewage

INVENTORY AND STATUS

-the existing lagoon has not been properly maintained and requires improvements
-sewage lagoon in dune area is operating at capacity and will require a third cell if the potable water demand increases with new developments
-the present force mains and/or pumps may have to be replaced and/or extended depending on the type and location of new developments
-existing facilities:
    -non-modern washrooms - pump-out vault type facilities
    -core area facilities - summer line to sewage lagoon
    -campground service centre/recreation hall - summer line to sewage lagoon/holding tank for winter use in Recreation Hall
    -cottage subdivision - outdoor privy or septic systems

MANAGEMENT OBJECTIVES

-ensure that essential services are provided without causing detrimental effects to the natural environment which may eventually present a health hazard to the park visitors

STRATEGIES

-improvements to existing sewage lagoon
    -fencing
    -lining

-expansion of facilities to service new developments as they occur

REFERENCES

Field investigations
DPRR staff

RECOMMENDATION FOR FURTHER STUDY

-if in the future the sewage lagoon is expanded, the feasibility of using treated sewage to irrigate a tree nursery serving the park should be investigated

Infrastructure **PROGRAM GUIDELINE** Dry Waste Disposal

INVENTORY AND STATUS

-present landfill site is situated in the sand dune area and does not conform to Public Health regulations
  -inadequate fencing
  -back-filling not carried out
-due to the sandy soil conditions at all of the possible disposal sites in the park, the dry disposal site should be relocated outside of the park
-regional project co-ordinator has carried out discussion with the local R.M. concerning one central landfill site for the community; however, no decisions have been made

Constraints:

-sandy soil conditions are conducive to ground water contamination by leachate from the waste disposal site

MANAGEMENT OBJECTIVES

-ensure that essential services are provided without causing detrimental effects to the natural environment

STRATEGIES

-relocation of dry waste disposal site outside the park in combination with local R.M. if possible

REFERENCES

Field investigations
DPRR staff

RECOMMENDATION FOR FURTHER STUDY

Infrastructure **PROGRAM GUIDELINE** Facility Design

INVENTORY AND STATUS

-Construction Management Services is presently attempting to establish an approved colour scheme program for all provincial parks. The proposed colour scheme for Pike Lake is included as Appendix VII
-building design standards have not yet been established

MANAGEMENT OBJECTIVES

-provide an aesthetically pleasing natural setting for park visitors

STRATEGIES

-approved colour schemes should be rigidly adhered to until design standards are established, exterior finishes on new buildings should be consistent in material types and design

REFERENCES

DPRR staff

RECOMMENDATION FOR FURTHER STUDY

BIBLIOGRAPHY

1. D.P.R.R. Park Visitor Services Branch, 1983. Provincial Outdoor Recreation Strategy Draft.

2. D.P.R.R. Planning Branch, 1983. Provincial Park Classification Draft. 12 pp.

3. D.P.R.R. Park Visitor Services Branch, 1983. Number of Participants in Saskatchewan Provincial Parks Programs. 1977-1982. 45 pp.

4. D.P.R.R. 1983. Pike Lake Provincial Park. Report on Management Strategies for the 80's. W.M. Beard. 57 pp.

5. Pike Lake Association, 1982. Proposal on the Enhancement of Pike Lake Provincial Park. 10 pp.

6. D.P.R.R. Planning Branch, 1977. Classification of Provincial Parks and Park Management in Saskatchewan. 28 pp.

7. D.P.R.R. Planning Branch. Campground Analysis Statistics.

8. D.P.R.R. Planning Branch, 1961. Plans of Development (Plans, Designs and Maps).

9. D.P.R.R. Planning Branch, 1959. Pike Lake. 12 pp.

APPENDIX

Appendix I Population Base within 50 km of Pike Lake Provincial Park

URBAN		RURAL	
Dalmeny	843	75% of Corman Park (#344)	4,220
Warman	1,726	50% of Perdue (#346)	265
Martensville	1,614	100% of Vanscoy (#345)	1,376
Saskatoon	164,269	100% of Montrose (#315)	606
Asquith	511	50% of Harris (#316)	218
Kinley	65	20% of Fertile Valley (#285)	149
Vanscoy	325	66% of Rudy (#284)	340
Delisle	932	66% of Rosedale (#283)	350
Tessier	54	100% of Dundurn (#314)	568
Conquest	265	50% of Lost River (#313)	183
Outlook	1,916	75% of Blucher (#343)	823
Hanley	498	Total:	9,098
Dundurn	550		
Clavet	270		
Bradwell	164		
Allan	913		
	171,915		

	174,915	Urban
	9,098	Rural
Total 50 km radius	184,013	

Appendix II: Recreational Opportunities within a 50 km Radius of Pike Lake Provincial Park

	Boating	Boat Rental	Camping	Cottages	X-Ski	Downhill Ski	Fishing	Gas	Golf	Hiking	Historic	Interpretation	Picnic	Playground	Rec/Dance Hall	Rental Accomm.	Rest/Concession	Horses	Snowmobile	Store	Swim	Tennis
50 km Radius																						
Regional Parks																						
Outlook									x				x	x	x		x				x	
Recreation Sites																						
Blackstrap	x		x		x	x	x						x	x			x			x	x	
Otapasso Trails																			x			
Valley Authority																						
Meewasin												x	x	x								
100 km Radius Regional Parks																						
Redberry	x		x		x		x		x				x	x			x				x	
Glenburn			x		x				x				x	x			x				x	
Eagle Creek			x										x	x	x		x				x	
Langham																						
Biggar						x			x				x	x							x	
Manitou	x		x			x			x				x	x			x				x	x
Valley					x			x					x	x	x		x		x			
Rec. Sites/Picnic																						
Petrofka													x									
Bordon Bridge			x										x	x								
Harris													x									
Elbow Harbour	x						x					x	x									
Kenaston													x									
Manitou			x										x	x							x	
Dr. Bicum													x									
Dana													x									

Appendix III Land Use of Pike Lake Provincial Park

West Side Land Use	Acres Area (approx.)	Hectares
Cottage Subdivision	38.4	15.9
Institutional	12.6	5.2
Picnic Grounds	48.2	20.0
Campgrounds	20.2	8.4
Sports (Golf Course 57.7)	61.9	25.6
Parking	8.9	3.7
Beaches	5.6	2.3
Administration and Maintenance	6.5	2.7
Boating Access	.4	.1
Trails/Unutilized	-	-
Total:	790	326.9

East Side	Acres	Hectares
Cottage Subdivision	5.6	2.3
Sailing Club	1.4	.6
Unutilized	263.0	108.8
Total:	270	111.8

Appendix IV Field Inventory of Pike Lake Provincial Park

Saskatchewan Tourism and Renewable Resources

Recreation Site Field Inventory

810-20-01

Region Saskatoon

District Pike Lake

Name of Park: Pike Lake Prov. Park

Name of Site: .....

Designation: Provincial Park (campground)
(campground, picnic ground, recreation site, roadside picnic)

Legal land description: NW 5-34-6-W3 Hectares: 506 HA

Year developed: 1960 Site maintenance: [X] D.T.R.R.

[ ] Dept. of Highways

Entry permit fee charged: [X] Yes [ ] No

Camping fee charged: [X] Yes [ ] No

Campsites (numbered)

Number of electrified sites	90
- non-electrified sites (table, barbecue)	97
- overflow sites (table)	15
- group campgrounds	3

Garbage Disposal

Number of garbage disposal cans 420

Central collection: [X] Yes [ ] No

- garbage disposal pits	1
- liquid waste pits	nil
- incinerators	nil

Camping and Picnic Equipment

Number of wood burning fireplaces	1
- barbecue stands	340
- pit fireplaces	5
- tables	400
- benches	56
- wood bins	nil
- wood storage shelters	nil

Sewage Disposal

Sewage disposal system: [X] lagoon [ ] municipal [ ] none

Number of trailer dump stations 1

Number of pit toilets 2 seats 2

- pumpout toilets 29 seats 58
- flush toilets 29 seats 29

Water Supply

Source:

- [X] well 4 wells 4 sandpoints
- [X] cistern 1
- [ ] town
- [ ] spring, lake or river

Distribution:

- [X] pressure system 9
- [ ] hand pump
- [X] irrigation system 2
- [ ] no distribution system

Miscellaneous Installations

Parking:

- number of defined lots	1
- total car capacity	1000

Roads and Walkways:

- km of road - asphalt	8.3
- cold mix	1.6
- gravel	3.0
- fireguard (maintained)	8.0
- length of surfaced walkways	300 m

Playgrounds:

- [X] Traditional 4
- [ ] Imaginative

Signs (all types): 170

Km of fencing: - barb wire 10
- chain link 4

Appendix IV (continued)

Trails

Km: Hiking	nil
Nature	~~3.5~~
Equestrian	~~nil~~
Snowmobile	~~nil~~
Skiing	~~nil~~
Snowshoe	~~nil~~
Canoe Routes	~~nil~~
Mini-bike scramble area?	☐ Yes ☒ No
Snowmobile scramble area?	☐ Yes ☒ No

Waterfront Facilities

Number of docks	1
- boat launch sites	1
- fish cleaning tables	~~nil~~
- fish cleaning tables	~~nil~~
Length of improved beach	400 m
Boat marina mooring sites	~~nil~~
Buoyed swimming area?	☒ Yes ☐ No
Boat rental concession?	☒ Yes ☐ No

Services within 5 km of site

	Yes	No
Gas station and minor repairs	☒	☐
Medical Services	☐	☒
Supply Store	☒	☐
Public Telephone	☒	☐
Restaurant	☐	☒
Rental Accommodation	☐	☒
Golf Course	☒	☐
Public Transportation	☐	☒
Aircraft Landing Facilities	☐	☒
Outfitter's Camp	☐	☒

Buildings, Structures, etc.

Number of picnic shelters	1
- camp kitchens	~~1~~
- trail shelters	nil
- entry kiosks	1
- day lodge	nil
- administration buildings	1
- interpretive centres	1
- recreation halls	~~1~~
- service center-campers	1
- day users	1
- serviced changehouses	1
- unserviced changehouses	1
- laundry - washers	3
- dryers	4
- maintenance and storage buildings	10
- tennis courts	2
- ball diamonds	1
- golf course	1
- swimming pools	nil
- paddling pools	nil
- restaurants	nil
- supply stores concession	1
- gas stations	nil
- public telephones	1
- street lights	25
Staff accommodation:	
- number of non-modern buildings	3
- rooms	5
- number of modern buildings	1
- rooms	5
Rental Cabins:	
- deluxe	n/a
- modern	n/a
- holiday	n/a
- non-modern	n/a

COMMENTS: (Please indicate any other existing facilities on the site which are not included on this form)

One entry gate office, 43 acres cultured lawn, 18 acres irrigated, one ~~residence and one golf course shelter.~~ One river pump system for water supply to Pike Lake.

Nov. 9, 1981
Date

Signature

Appendix V: Park Use Statistics

Summer Recreation and Interpretation

a) Interpretive Programs Participation

Year	No. of Participants School Groups	Non School Groups	Groups & Nature Centre Visitations
1977	1,424	326	1,750
1978	1,816	640	2,456
1979	1,430	536	1,966
1980	1,180	*1,000 665	2,845
1981	1,769	1,870	3,639
1982	2,037	*3,500 1,139	6,676

*Nature Centre Visitations

b) Recreation Programs Participation

Aquatic Programs - 1982

Red Cross Swim Program - Total Swimmers Instructed - 155

Royal Swim Program - Total Swimmers Instructed - 6

Red Cross Small Craft Program - Total Instructed - 22

Recreational Small Craft Program - Total Instructed:

- Canoeing - 27
- Sailing - nil
- Boardsailing - nil
- Snorkelling - nil

Total Participation by Program - 1982		1983 (to July 31)
Crafts	- 22	209
Sports and Games	- 100	615
Campfires	- 205	282
Special Events	- 200	453
Other	- 62	641
Total	- 589	2200

Recreation Hall Visitations - no public booking because of condition of Recreation Hall.

Appendix V - (continued)

Recreation Participation (includes aquatic beach programs and aquatic special events)

Year	No.
1979	-
1980	71
1981	*885
1982	653

*Recreation Programs run by aquatic staff.

Water Counts

Year	Number of Participants	
1977		5,130
	(4)	1,283
1978		4,681
	(3.5)	1,337
1979		4,727
	(4)	1,182
1980		4,999
	(3)	1,666
1981		3,403
	(3)	1,134
1982		4,276
	(4)	1,069

( ) indicate number of instructors followed by number of swimmers/instructor

Appendix VI: Camping Statistics

	Total No. of Permits	Total No. of Campers
1978	5,139	20,199
1979	5,358	19,536
1980	6,067	22,272
1981	4,738	16,646
1982		13,950

Occupancy Rates/Month (Percentage)

	1982	1981	1980	1979	1978
May	6.11	19.8	15.5	11.7	13.3
June	25.9	29.2	38.4	31.0	34.4
July	51.8	55.9	84.6	58.9	58.0
August	27.2	28.3	40.5	44.9	36.5
September	1.8	4.0	2.1	2.9	4.2

Length of Stay (Percentage)

No. of Days	1982	1981	1980	1979	1978
1	56.6	87.0	53.6	60.9	58.0
2	26.3	8.2	27.3	22.7	26.2
3	10.2	1.1	9.5	8.0	7.5
4	3.7	1.1	5.1	4.8	3.6
5	1.0	1.1	1.5	1.0	1.8
6	.7	-	.7	.5	.5
7	1.0	1.1	1.7	1.6	1.7

Appendix VII

REGIONAL COLOUR THEMES

SASKATOON

The following is a proposed colour theme for Saskatoon Region excluding Douglas and Danielson Provincial Parks.

Buildings - Exterior
eg. stores, concessions, recreation halls, office buildings, kiosks, pump houses, pail-a-day toilets, fire caches, maintenance shops, etc.

C.G.S.B. 205-108 Exterior Oil &

Olympic "Russet" solid oil

[redacted]

OR

Olympic #716 semi-transparent oil on new wood &

716 Naturaltone Cedar

Olympic "Russet" overcoat.

[redacted]

*Russet

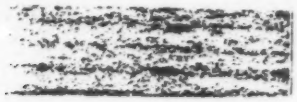
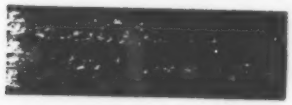
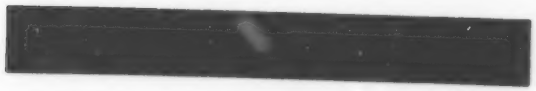
Buildings - Interior
(not including those constructed by Government Services)
eg. pail-a-day toilets, campground permit offices, maintenance shops, pump houses, kiosks, stores, concessions, etc.

Walls & ceilings C.G.S.B. 101-203

Trim C.G.S.B. 108-109

Wood or concrete floors C.G.S.B. 301-102

[redacted]

Picnic Tables	C.G.S.B. 205-108 Exterior Oil if previously painted
	Olympic #716 semi-transparent oil on new wood
	
Stub Posts, Wood Barriers, Sign Posts, Park Benches, and Board Walks	C.G.S.B. 504-102 exterior oil if previously painted
	Olympic #708 semi-transparent oil on new wood
	
Lamp Standards	C.G.S.B. 503-227 oil
	
Metal Gates	C.G.S.B. 505-111 oil
Water Points	C.G.S.B. 502-204 oil
Wood Boat Docks	Clear Wood Preserver or Construct of pressure treated wood

Wood Boat Dock	Clear Wood Preserver or construct of pressure treated wood
Barbeques	C.G.S.B. 515-101 heat resistant

[redacted]

Regional Project Co-Ordinator	Regional Director
Director, Construction & Management Services	Executive Director of Operations

APPENDIX VIII

PIKE LAKE FISHERIES RESOURCE

1. History

Pike Lake is a small oxbow lake, 490.9 ac in area, with limited fisheries possibilities. It is very shallow with a maximum depth of 8.1 ft. being recorded on the sounding map. By mid-summer, the lake is entirely inundated with weeds, the main species including Potamogeton richardsonii and Myriophyllum. There are no inlets or outlets. In the past, flooding in spring from the South Saskatchewan River raised the water level, but since the Gardiner Dam was constructed in 1967, inflow is achieved by pumping from the river.

Pike Lake has a history of winterkill, which occurs almost every year. On January 7, 1983, a winterkill occurred and was investigated by the Fisheries Research Branch. Oxygen readings were taken in two locations - in the middle of the lake and in an open spring. Concentrations were 0.4 and 1.9 ppm, respectively. Generally, levels below 3.0 ppm are toxic to fish.

Species present in Pike Lake include pike, suckers, burbot and several types of minnows. Pike is the only species angled by locals to a limited extent. The presence of so many aquatic weeds deters many fishermen (K. Coleridge, personal communication). In 1968, a request was made to stock perch in the lake. This request was rejected by the Department because the winterkill situation would prevent perch, stocked as adults, from maintaining a natural population. Perch stocking relies on natural reproduction to sustain the population after stocking.

2. Management

The basic cause of winterkill is the depletion of oxygen, after formation of an ice cover, through decay of organic matter. Determining factors include the amount of organic matter and oxygen concentrations at freeze-up (Johnson 1970). The development of ice cuts off contact with the atmosphere, so the only source of oxygen to the water is that derived from photosynthesis. Any amount of snow cover on top of the ice drastically reduces the source of oxygen. Two approaches can be taken to manage lakes that regularly winterkill:

i) they can be managed to provide summer angling by stocking large rainbow trout fingerlings (6" or greater) or catchable-size trout. Such methods are used in rearing ponds where fry are planted in the spring and removed before freeze-up for either harvest or transplant into a larger water body.

ii) Methods can be employed to increase oxygen content during the winter months through mechanical means.

The first approach does not appear suitable for the management of Pike Lake. The presence of pike prevents the stocking of, for e.g., rainbow trout. Although Pike Lake undergoes regular winterkills, the population of pike has never been completely eradicated: it can be noted that no stocking has ever been done. Some fish always survive in the springs surrounding the lake and the population is probably also reinstated through water pumped from the South Saskatchewan River.

Therefore, it seems more suitable to try and increase the oxygen content of the water by some mechanical means, thereby reducing the frequency of winterkill. Several methods have been noted in the literature to increase oxygen concentrations (McWilliams 1981):

i. small holes chopped in the ice
ii. water pumped over ice
iii. carbon or lampblack applied to melt snow and ice
iv. snow plowed in wide strips on ice or lake surface
v. aeration with small compressors and perforated hoses
vi. partial drawdowns
vii. addition of oxygenated water from upstream reservoirs.

Many of these methods are not suitable for application in Pike Lake as they involve a hazard with open water areas or weakened ice cover. Since Pike Lake is used extensively by winter recreationists, safety must be a consideration.

Oxygenation of water through the use of compressors has been documented in the literature with some success. In Larson Lake, a small bog lake in Wisconsin, the use of an aeration unit during the ice-covered months kept dissolved oxygen concentrations at the bottom at 6.0 mg/L. In Mirror Lake, Wisconsin, however, the aerator was ineffective in retarding oxygen depletion. The aerator in this instance remained frozen into the lake, eliminating the open water hazard, but also decreasing the efficiency of operation (Smith 1975). An open water area around the system provides an air-water interface which facilitates light penetration and oxygen production. It should be noted that both Wisconsin lakes are much smaller than Pike Lake, their areas being only 13 and 12 ac as compared to 490 ac. The efficiency of such an operation is questionable in a lake the size and length of Pike Lake.

Eight aeration pumps were installed in Black Hawk Lake, Iowa, and effectively prevented fish winterkill during 1978-79 (McWilliams 1981). This lake is 923 ac in area, approximately twice that of Pike Lake. Therefore the cost involved in utilizing such a system would be substantial.

The use of an irrigation pump to add aerated water to Pike Lake on a year-round basis has been suggested. This method, also, involves an open water hazard during the winter months. Even if no technical problems occur in keeping the unit operating during winter, the effects of aeration are uncertain.

Another solution to the winterkill problem in Pike Lake may be in keeping areas of the ice clear of snow. In this way, phytoplankton would survive and keep the lake oxygenated during daylight hours through photosynthesis. However, it would be critical to keep the snow off as decomposition and resulting winterkill would be imminent. Phytoplankton would probably begin decomposing approximately 16 hrs. after a snowfall if it was not cleared (F.M. Atoon, personal communication).

Snow clearing was recently tried at Rock Lake in Manitoba without success. (Barica, J., Gibson and W. Howard. 1983. Feasibility of snow clearing to improve dissolved oxygen conditions in a winterkill lake. Can. J. Fish. Aquat. Sci. 40:1526-1531); they conclude snow removal is not economically viable for large lakes (i.e. over 20 ha.).

The authors suggest snow clearing could maintain sufficient oxygen levels if at least 15% of the surface were kept clear. Success would depend on:

1. high oxygen levels at freeze-up

2. absence of slush or opaque ice during the winter so light transmission is maximized.

Cost may be considerable - by using the same costs as the Manitoba project, keeping 15% of Pike Lake clear would cost: 30 ha x $165/ha = $4,950 annually.

For this reason air injection with blowers may be more feasible for Pike Lake. For this shallow lake it may be necessary to use perforated hose rather than Helixors. If adequately marked, open water areas should not be a hazard.

3. Recommendations

i. Test-net the lake to determine the current status of the fish population.

ii. Conduct a creel census to obtain estimates on the numbers and origin of anglers utilizing Pike Lake, and determine whether or not the fishery meets the needs of the angling population.

iii. Raise the water level. This should be possible once the new permanent pump is in operation. Such action reduces the oxygen demand and increases the available supply. The nutrient load would also be reduced, if circulation is created by using some of the water for irrigation purposes. Reducing the amount of nutrients would have an effect in weed control.

iv. Control the weed situation. Up to 1982, control has been attempted temporarily through the application of chemicals and/or mechanically cutting the weeds. Currently, aquascreen is being used in two experimental areas in Pike Lake and will be applied to larger areas in the near future. If the screen was applied in 25 ft. wide strips 10 ft. apart, ample weed beds would remain for pike to spawn in, and in fact, the potential areas would be increased since it is the littoral edge that is utilized (F.M. Atton, personal communication). Decreasing the biomass of aquatic macrophytes would reduce the amount of organic matter that decomposes during the ice-covered months and thus would reduce the oxygen demand.

v. Keep wide areas of Pike Lake clear of snow during winter. In this manner, phytoplankton could photosynthesize and prevent oxygen depletion. The snow must be removed within hours of falling so as to prevent decomposition of organic matter and subsequent winterkill.

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Smith, S.A. et al. 1975. Aeration as a lake management technique. Wisconsin Department of Natural Resources, Tech. Bull. No. 87.

POOR

QUALITY

ORIGINAL